DOCUMENT RESUME

ED 167 191 IR 007 190

AUTHOR Avedon, E. M.; Stewart, T. C.
TITLE COMIT: The Leisure Experience.
PUB DATE 6 Apr 78
NOTE 11p.; Paper prepared for the CCEIT Symposium (Waterloo, Ontario, Canada, April 6, 1978); For entire proceedings, see IR 007 104

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Audiovisual Aids; *Computer Assisted Instruction; *Educational Strategies; Educational Television; Formative Evaluation; Higher Education; Individualized Instruction; Instructional Design; Intermode Differences; *Learning Modules; Program Evaluation; *Recreation; *Teaching Methods
IDENTIFIERS *Computerized Multimedia Instructional Television

ABSTRACT

This paper describes the use of an automated interactive teaching system for the teaching of a survey course in recreation which examines the phenomenon of leisure from a range of disciplinary perspectives including history, anthropology, archeology, philosophy, religion, economics, sociology, political science, psychology, planning, geography, and others. Initial pre-test results indicated that the traditional lecture group and the COMIT group started with similar background knowledge, and there was a considerable increase in the amount of information acquired; however, there was no significant difference between the two groups in the amount of information increase. COMIT has incorporated a standard television set into its design, and this, coupled with the growth of home computing, indicates that the project itself may be a glimpse of leisure behavior in the future. (Author/JEG)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED167191

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

COMIT: THE LEISURE EXPERIENCE

by

E.M. Avedon
and
T.O. Stewart

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

E.M. Avedon

T.O. Stewart

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

IR007190

COMIT: THE LEISURE EXPERIENCE

by

E.M. Avedon and T.O. Stewart

Professor, Research Associate

Department of Recreation

Instructors who teach introductory survey courses that accommodate two, three, or four hundred students attempt to automate as much of such courses as possible. Usually, all tests and examinations are designed for automatic marking, and assignments are designed for automated analysis where possible. When such courses are taught year after year, with only slight content modification to introduce new findings or points of view, routine procedures for the use of audio-visual materials and other teaching aids are standardized as well.

Dr. Avedon is an instructor who teaches such a course. When automated teaching was brought to his attention, he became interested for a number of reasons. Recreation 100 is an introductory survey course that examines the phenomenon of leisure from a range of disciplinary perspectives, such as history, anthropology, archeology, philosophy, religion, economics, sociology, political science, psychology, planning, geography, and others. He had been responsible for the course for the past six years. The course has been taught in a large lecture hall, in a three-hour block of time one night a week, over a term. Students are primarily in first year from many departments and faculties both at the University of Waterloo and at Wilfrid Laurier University. Less than 15% of the class are second to fourth-year students. A few students each year are non-degree students, auditors, graduate students engaged in make-up year studies, and part-time students.

The course is taught in typical lecture fashion, where the instructor functions as the primary medium of instruction. He makes considerable use of instructional aids, such as sound motion pictures, overhead projections, 35 mm slides, video tapes, audio tapes, charts, maps, and a variety of artifacts which are passed around in class. His intent in using different devices has been two-fold. People learn in different ways, and the range of media has been calculated to appeal to the differing learning abilities of students. Secondly, three hours of straight lecture is difficult for any one to sit through. The size of the class, and the amount of material that must be covered during the term limits the amount of discussion that can ensue at each session. Many students, particularly first-year students,

are intimidated by the size of the class, and are afraid to ask questions or comment. Interest in automated teaching was also stimulated by student evaluations of the course. Each year students report that they wish there was more opportunity for individualized instruction. Students cite the desire for specific types of opportunities:

1. to have certain content presented at a slower pace;
2. to have some content repeated;
3. to have more time to "think through" certain concepts;
4. to be able to have various technical terms used in a lecture defined during the lecture;
5. to be able to examine certain diagrams, charts, or slides in more detail;
6. to participate in a structured tutorial experience that would highlight salient factors in a lecture;
7. to review certain content in considerable detail.

Our initial understanding of COMIT was that the proposed system could be used to meet some of the expressed individual needs of students that could not now be met with the classroom methods in use. The system would be designed to permit an individual student to experience a series of lectures in a manner similar to those presented in class; however, the student would be able to interact on an individual basis during any part of the lecture. The student would be able to proceed with the material at his or her own rate of speed, define technical terms as necessary, repeat sections of the lecture that were wanted for review, and engage in tutorial and summary-review sessions. Most of the audio-visual aids used in the classroom could also be used in the system, therefore, students using the COMIT system would have almost the same experience as those in the classroom.

The system sounded ideal, and seemed to offer many of the advantages that the students had been requesting.

On Becoming An Author:

Like others in the project, the first few weeks were spent learning how to become a "course author". We really didn't have a firm understanding of the total task at this time. Support and encouragement of the Department of Recreation chairman and other members of the Department had been expressed. The dean talked with Dr. Avedon about the project, and reminded him that

once involved, some "tradeoffs" would have to be made;other activities that might be more significant might have to be sacrificed. We did not know (back in 1975) how much time would actually be required. In any event, we proceeded to become "course authors".

Since Dr. Avedon had been teaching the course for a time, his lecture notes were well organized (or so he thought). He began the "authoring" process with the assistance of a graduate student from the Department of Recreation. With COMIT staff, we decided to use the section of the course dealing with history and archeology. This section took about seven hours of lecture time in the classroom, and was usually followed by the first quiz. Readings that accompanied the lecture were from the first three chapters of the course textbook. We began by writing some tutorial statements and questions concerning the first topic - how historians and others know about daily life and leisure behaviour of preliterate society.

Sometimes Dr. Avedon would write a "frame", and sometimes the graduate student assistant would write one. After we had a few frames completed, we were shown how to enter them into the programme, and view these on our Volker-Craig terminal. We were very impressed with what we were doing, but still had little conception of what the total package would look like. COMIT staff had told us about the hardware to come, and were quite patient with our neophyte productions and our almost daily cries for assistance. As we began to put the frames together as a unit, it was noticed that the tutorial had begun to take on a personality of its own. We had tried to take the edge off some of the material through use of colloquial expressions in the "hint" messages, "wrong" answer messages, and "exit" messages associated with each frame . Subsequently, as each unit was developed, we made a conscious attempt to mold the personality of the automated tutor . Finally, we called him "MARVY"(short for"MARVELOUS"). We then went back over all completed content, and wrote and rewrote an introductory session in which MARVY introduced himself and explained to the user how he could be of help. This task forced us to gain more understanding how the system would work. We decided that we wanted the experience to be as personal as possible for the potential user, and we requested that COMIT staff modify the programme so that MARVY could refer to the prospective student user by name, not only in the introduction, but in rewarding the student user when a tutorial answer was correct.

This action, though contrary to most approaches to computing, was in concert with good pedagogic practice. The request required the COMIT staff to write special software for our course. After a while, it became apparent that the standard COMIT introduction and instructions for users were not in keeping with our MARVY concept, so we rewrote these materials as well.

During the process of building the tutorials, Dr. Avedon found that his course notes were not as adequate as he believed them to be. Some notes were detailed and explicit, while others were so terse and cryptic, that even he didn't know what he had intended. In some instances, the graduate student assistant would question his logic, and consequently he reworked his notes. Furthermore, the COMIT system forced a course author to anticipate certain types of responses from users, and to prepare messages accordingly. These two factors were instrumental in stimulating him to find a more adequate method of organizing notes, and to find additional detailed information for class lectures.

When we were satisfied that we had built the general model for the COMIT course, we enlisted the aid of a number of undergraduates who in the past had taken the course in the classroom. We asked them to test the tutorial on the Volker-Craig terminals. They provided us with suggestions for improvement of content. They told us when parts of the module were not clear, but most of all, they let us know that we were on the right track with the "tone" that we had built into the module.

Using Special Features:

When the tutorial sections were finished we found that we had about fifteen programme segments. We built the module in such a way as to provide a few minutes of the course per se, then tutorial content, then more course material, then more tutorial, etc. At a natural break in the content, say going from one period in history to the next, we provided a short summary. We then developed longer review sections. Next we created some software which offered the student the option of deciding if the summary was enough of a review, or if a more detailed review was required. If the student user went through the detailed review, he or she was then asked if that was enough of a review, and if not the subunit could be requested again and the student user could redo the session. During this time we also built a glossary of technical terms that could be requested by the student user at any time.

Our next task was choosing the visuals that would be used. The hardware had not arrived so we were not sure how the slides and overheads we used in class would look on the special COMIT terminals. However, we selected these materials and (with help) began to write software statements for their use in the module. Subsequently, when the COMIT terminals were made available and we got a look at some of the visuals, we found that they were not appropriate. In the classroom, a slide is "blown-up" on a screen and details can be readily observed, but on the terminal detail was often lost. This factor necessitated a search for more adequate visuals. This latter process acted as a catalyst to examining all of the visuals used in the classroom, and to effect change and improvement there as well.

Some standard slides and overheads just would not work well on the COMIT terminals. Consequently, we were introduced to the use of the colour-T.V. camera. The technique was new to Dr. Avedon. In the past he often found visual materials, a portion of which was appropriate for teaching purposes; but these had to be discarded because of some content present. The colour-T.V. camera enabled us to store on the video-disk only the portion of a visual that was relevant. This enhanced the module considerably, for as a result, within the COMIT project certain concepts could be illustrated that could not be illustrated in the classroom. We finally loaded about 250 visuals on the video-disk.

The next task was to create the audio tape portion of the module. If Dr. Avedon thought that he had problems with his course notes before, he must have been dreaming! Now he found that what was needed was a complete plan for recording purposes. His voice would come from a set of headphones while the student user was viewing a slide or some other visual, and we had to be sure that what he was saying matched the visual the student user saw on the terminal. At times other sound sources (such as he used in the classroom) were required to match visuals. He began to write a script in the true sense of the term. The process became more complicated as he went on since he had to indicate when audio would be used, when video would be used, when a visual would be on the screen, when a tutorial question would be used, etc. In addition, he had to include different indications for timing with respect to leaving space on the audio tape for a slide change, or a tutorial section. Fortunately, he was familiar with the UW software package SYSPUB and using this package simplified the process of writing the script.

This process also resulted in his decision to prepare all of his lecture notes for the entire course in the same manner, which resulted in another "payoff", that will be mentioned later in this paper.

After preparing the complete script, Dr. Avedon began the process of making the necessary audio tapes. Because of constraints placed upon the use of audio material by the hardware, nine different 30-minute tapes had to be recorded. Although he had access to recording equipment that could electronically mark each segment on the tapes, COMIT staff had to glue reflective markers before and after each segment of tape. There were about 200 of these, and four copies of each segment!

Next came the creation of video segments. These were done at the University of Waterloo Audio-Visual T.V. Studio by the audio-visual staff. Unfortunately the colour camera was not installed, and the video segments were made in black and white. On camera, Dr. Avedon went through the motions of giving portions of lectures in a classroom setting. He used the blackboard, and handled various related artifacts that were being discussed. In all we made about 20 video segments.

The next step was to transfer segments of motion picture film to video tape, and superimpose audio tape sound on the video tape. Dr. Avedon selected film segments and worked with the audio-visual staff in their studio to effect this process.

Putting It All Together:

Working with COMIT staff we "married" the various components together in the module. It was at this time that we were introduced to a number of other techniques that could be built into the system. Some map work with use of the light pen, and certain colour flashing effects with visuals had been planned to take full advantage of the COMIT system. These aspects were added at this stage. We also found in testing pieces of the module, that certain quoted material on audio tape could further be enhanced by showing the user the words on the terminal screen as the user heard them. Thus, we added this aspect to the module. We learned at this time about the system's ability to enlarge characters on the screen. and we modified certain content in this manner. When we had finished, the module was composed of the following components:

1. introductory material and user instructions
2. tutorial material

3. summary and review material
4. slides, photographs, diagrams, etc.
5. audio tapes
6. video tapes
7. motion pictures on video tape
8. textual material for visual display
9. light pen and other visual display effects.

If we were to do it all again, we would probably do many of the same things, but in a very different sequence. The new sequence would go something like this:

1. write the script
2. tape the video segments
3. tape the audio segments
4. choose the visuals
5. write the tutorials
6. write the summaries and review materials
7. add the visual enhancements.

The Student Users:

At first the plan seemed simple. About fifty students would be chosen to use the COMIT module instead of attending Recreation 100 in the classroom during the 1977 fall term. We had been told that a systematic evaluation would be conducted by someone else, and our department would not have to be concerned with this aspect. Subsequently, we learned that if we wanted a systematic evaluation, we would have to do it!

Dr. Avedon persuaded one of his research associates, Mr. T.O. Stewart to undertake this task. One group of 50 students from the class was chosen at random to take instruction from the COMIT module. For analysis purposes, a matched group of 50 students from the class was chosen to take instruction in the usual manner in the classroom. Matching was on the basis of gender, year of study, and department of registration. Both groups would then take the usual first classroom quiz as a normal part of the course to determine if there was a difference in the amount of information retained and whether this difference could be attributed to the method of instruction received.

A somewhat elaborate design was constructed that included a pretest device and a structured sampling procedure. The experiment ran during the first three weeks of the 1977 fall term as planned. Considerable data was

gathered, and we are still in the process of analyses. However, at this time, we have been able to determine several things.

From the results of the pretest, it is clear that the two groups did not differ significantly in the amount of material they knew before they started the course. From the results of the posttest, a considerable increase in the amount of information acquired was achieved, but there was no significant difference between the two groups in the amount of information increase. A large number of exogenous factors were controlled for, and still no differences were found.

These preliminary findings may not sound important, depending upon one's frame of reference. These findings could be interpreted to mean:

1. Dr. Avedon is as good in a large classroom as the computer is in a one-to-one situation;
2. The computer can teach as well as Dr. Avedon can;
3. The computer did no better than Dr. Avedon;
4. The computer did no worse than Dr. Avedon;
5. Or we were measuring the wrong things!

Toward the end of the fall term, students who had used the COMIT module talked with other students in the class about their experience. Consequently, "the others" asked if they could try the module, especially as a review technique in preparation for the final examination. Some students who had missed some of the early sessions of the class asked if they could make up these sessions by using the COMIT module. We understand that a number of students scheduled a series of appointments for these purposes prior to the final examination period.

A Postscript:

Members of the Department of Recreation Curriculum Committee also spent some time testing the module and they wanted to know when they could start developing a course on the system as a consequence of their experience. They were rather disappointed when told the system was only experimental and would be leaving the University. As specialists concerned with leisure, and aware of the growing amounts of leisure used in North America for adult and continuing education, the COMIT project was of particular interest to members of the department. COMIT had been able to incorporate a standard televison set into its design, and this coupled with the growth of home computing,

indicates that the project itself may be a glimpse of leisure behavior in the not-too-distant future.

Three other results are immediately apparent from the experience. The department curriculum committee has decided to make use of components developed for the project in a correspondence course to be offered this fall. Dr. Avedon's course notes cum script are now in such organized condition, that he has a draft of a manuscript for a publishable textbook. Finally, he looks forward to teaching the course this fall with all of the enhancements developed for the COMIT project. The project stimulated a number of new thoughts on better ways to teach the material, and he is going to try to include some of these methods this fall. We only wish the University were going to retain some of the software from the project to provide all the students with tutorial and review capability if not through the computerized instructional television then via standard UW hardware.

ITEM	DID	WOULD DO
write script	4	1
tape video	6	2
tape audio	5	3
choose visuals	2	4
write tutorials	1	5
write reviews	3	6
add enhancements	7	7

Figure: COMPARISON OF THE ORDER OF COMIT AUTHORING TASKS